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Homoeopathy
Ed. F/lli Giannini 2006 154 pp.

The critical self-organized system "man" is very sensible to external excitations, so that some medicines cure diseases on short-term range, but may modify and weaken the nervous and immunitary systems, so that strong diseases may appear after long time; to the contrary, homeopathic cures do not damage human body.

Homoeopathy is essentially a method for the preparation of medicines. For a long time it was ignored by established medicine and considered to be spurious. Scientists still largely adopt this view.

The book summarize the original theory proposed by Hahnemann (1755-1843), according to which health is bound up with the vital energy that harmonically controls interactions among various parts of the body and the subsequent ones. Recalls that homeopathy is based on three fundamental principles: (i) similarity (*similia similibus curantur* - similar things cure similar things), (ii) the effectiveness of medicines is increased by means of dilution, and (iii) the use of "dynamization", a process that also complements dilution.

Then it analyze these principles, starting with the dilution.

The preparation starts with the mixing of one part of a mother tincture with nine parts of water (or alcohol), then the mixture is shaken. A part of this mixture is extracted (it is called the first power and designated D1) and it is again mixed with nine parts of water. The solution is shaken up once more and thus the medicine of the second power is obtained, obviously having one-hundredth part of the mother tincture. The procedure is repeated up to the sixth power.

A molecule of the tincture vibrates with a characteristic frequency, whereas a molecule of water has a different characteristic frequency.

Different tincture molecules are not necessarily in phase with one another. It follows that the phases are randomly distributed and therefore the vibrations sum is zero.

To verify, it is enough to sum a sine function with all the others of the same period, having gradually increasing phases. It will be seen that the result will be zero. The same does not happen if more waves are added having different periods

Vibrations of a mother molecule that is inserted into a mixture of molecules of the same type will interfere with them in all the possible phases, producing a net external effect of zero vibrations (though each of the individual molecules will still be vibrating). This is not true when a wave encounters another wave with a different period.

The isolation of a single molecule, by means of successive dilution, make sure that its oscillation is saved.

Established science cannot give any explanation of the therapeutic mechanisms of these medicines, but here are some possible scientific approaches.

It is known that a mole of a chemical element contains 10^{23} molecules. Tincture is present as a solution in the first mixture, its volume being a mole dissolved in a mole of water (that is in 18 grams).

Let us repeat this dilution using, subsequently, always 18 grams of water. In a mixture of power 23, with perfect mixing, one molecule of the tincture would probably be present in a

mixture of 18 grams of water. If a patient takes in 18 grams of a mixture having its power D23, it will probably contain one mother molecule.

It is clear that, having started with the initial solution of 18 grams of water, nothing more dilute than D23 should be used. It will be shown that, if a patient takes one elementary molecule which is dynamicized, it turns out that excitation and mixing are very effective.

Dynamization. The homeopathic molecules are shocked and thus ionized.

The help of physics for homeopathy could be to suggest that further dynamizing of the mother tincture can be achieved by other source of external ionization. This would strengthen the motion of an isolated molecule of the mother tincture, and increase its vibrations. Another suggestion is that intravenous injection of an ampoule containing a pre-ionized mother molecule would be useful.

Recently, the interception of a sick cell by injecting isotopes which are also able to ionize the cell has been successfully tried experimentally.

A ionized molecule of the mother tincture may cross a ion flowing (i) in the current of blood, or (ii) along the digestive apparatus.

The book estimates the order of magnitude of parameters for the study. (i) The blood speed v in an aorta is about 0.6 m/sec (though it is not constant, as it is pulsed by the heart). From the energy equation $h \nu = \frac{1}{2} m v^2$, where ν is the frequency of oscillation, m is the mass of an ionized mother molecule equal to 10^{-25} kg, and h is Planck's constant. It follows that $\nu = \frac{1}{2} \times 0.6^2 \times 10^{-25} / 6.6 \times 10^{-34}$, i.e., the order of magnitude of ν is 10^7 Hz. Inside a very thin vein, owing to the friction, the speed is many times lower (10^{-3} m/sec), so that the frequency is reduced there to $\nu = 76$ Hz.

(ii) Assuming that a molecule flows in the digestive apparatus with a mean speed $v = 1$ m/hour, the above computations yield $\nu = 7$ Hz.

The frequency ν would thus range between few hertz and 100 hertz, a range typical of the ions along the tissues and the cells.

The principle of "similia similibus curantur"

The book, for the sake of argument, considers a "sick" molecule to be one that has its energy reduced to a great extent. The energy of a structure is given by the amplitude of its vibrations, because the energy is proportional to the square of a swing.

It is natural that the frequency of oscillation of a "healthy" molecule is the same as that of a "sick" molecule. The interaction of the oscillation of a healthy molecule with the sick one, will increase the oscillation of the latter, though at the cost of diminishing its own oscillation, thus restoring just one molecule it to partial health.

The encounter of a mother molecule with an sick molecule of the same type will transmit energy to the latter and therefore revitalize it.

Two different way of interactions have been analysed, (i) the mechanic and (ii) the electromagnetic ones.

- (i) The only energy the "healthy" molecule can supply is what it contains, so at best it ends up with two half-sick molecule. But the therapy may last many months, during which the going on restoring process becomes effective.
- (ii) A ion that moves with an accelerated motion generates an e.m. field, whose frequency's spectrum may be estimated according to the above computations. Both the ionized homeopathic molecules and the ions transported by the lymphocytes

flow in the current of the blood and generate e.m. spectra, typical of each ion. The *similia similibus curantur* principle ensure that both the spectra are equal so that the homeopathic e.m. field may excite and restore, through resonance, the e.m. field of the natural ions flowing through the body.

A similar effect may be hypothesized for the ions (notably Ca^{++}) that move within the presynaps of the neurons of the cerebral system.

This gives an analogy relevant to homeopathy that claims to cure faulty molecules with molecules having the same faults, i.e. according to the expression "*similia similibus curantur*". A molecule of a different type would have some different oscillation period and therefore would not be able to "resonate" with and cure a sick molecule.

Therapeutic applications of homeopathy according to physics

All in all, homeopaths unconsciously employ, in a therapeutic way, the physical mechanism used in nuclear magnetic resonance for diagnostic purposes. This technique, in fact, serves for the analysis of molecular complexes, it is based on the examination of the absorption spectrums of radio waves by nuclear magnetic resonance and applied to cells or tissue fragments.

Now, in accordance with Kirchhoff's law, if a substance absorbs a certain wave having frequency ν , it is able to emit only and solely this wave.

It follows that, simulating homeopathy, at a definite moment the frequency ν of a sick molecule could be excited by means of resonance with a wave of the same frequency either to vivify it or, acting in an antiphase, to destroy it.

To try to understand how a recovered molecule can constructively act upon a network of sick molecules that constitute, for instance, a neoplastic form (cancer cells) the book starts from Planck's quantum postulate of 1900, from which Heisenberg's indeterminacy formula can be deduced:

$$\Delta p_i \Delta q_i = h$$

regarding the position, q_i , and the momentum, p_i , of a particle.

According to Landé this expression can be interpreted in the following way: a body (as a lattice or a crystal) provided with spatial periodicity Δq_i can modify its momentum p_i by multiples of $\Delta p_i = h/\Delta q_i$.

This relationship, valid also for a neoplastic molecular lattice, demonstrates the possibility of expansion of the moment, i.e. of the vibrating energy transferred by the mother molecule to a neoplastic structure. It is worth remembering that inside cytoplasm is also present, along with other cellular organelles, a granular endoplasmatic lattice or ergatoplasma and that of a non-granular fluid.

Heisenberg remarked, however, that the dimension relating to the determination of the position and the moment of a particle was a "matter of a personal belief", or that of "a personal taste". To attribute to them a greater or lesser meaning, pointing out, implicitly, the incompatibility of statistical theories with deterministic theories.

This suggests that statistical evidence, even if it is highly significant, cannot be used deterministically, as medicine and other scientific disciplines may sometimes attempt to do. This applies to those outlined by numerous homeopathic comparisons (and from other sources, as for instance, the effect of lunar phases on biological rhythms).

It will be useful to mention, furthermore, that determinism applied successfully to explain physical phenomena, such as ionization of a molecule of water, cannot necessarily be extended to the complex and chaotic systems that govern the kingdom of animate nature. That is why biology can include it only in physical or chemical terms. In chaotic phenomena, initial conditions play an essential role in their evolution which depends also on feedback phenomena that appear within living organisms as a result of any weak external impulse.

It may be that the principles of physics previously quoted for explaining the therapeutic mechanisms of homeopathy are effective, despite the calculations that show the minuteness of the energy involved. It is worth remembering the principle of conspicuous (though unpredictable) meteorological effects at a distance induced by the pulsating wings of a butterfly.

Studies of pathogenic effects of radiation have shown that modifications of biological cells are essentially produced in an indirect way, through the transfer of the energy deriving from the irradiation of molecules of a solvent, or by radiolysis of water.

The aforementioned physical principles that are, perhaps unconsciously, the basis of homeopathy, can indicate the way to advancing homeopathic treatment: a better employment of stem-cells, of viruses and bacteria, remembering that viruses and bacteria are not only contrary to the life, but they also compliment it.

The above physical model has explained the meteoopathies and the music therapy and has supported the coherent electrodynamic theory proposed by Preparata.

Homeopathy brings to mind, in a general sense, the therapeutic use of music, which has often been found to be effective. This method is, however, indirect, as acoustic waves received by the ear pass through neural cells to the brain, which, using its enormous and unexplored capabilities, processes them and gives to neurons themselves renewing stimuli affecting molecules and cells.

Musical therapy uses and extends the same beneficent mechanism induced by the brain that produces joy and, therefore, revitalization, derived from listening to acoustic vibrations, analogously as light waves emitted by colours of a pictorial work or from harmonious lines simulating clear waves which delineate sculptural and architectural works.

The book has analysed in detail the needle's therapy and notably the use of the "Extremely Low magnetic Frequencies" (ELF) waves providing effective suggestions. It has shown that the frequencies employed belong to the same spectrum of the external geomagnetic fields, proving that there are interferences between these fields.

Finally a magnetostrictive effect is suggested to explain the mechanism of the ELF.

In conclusion, homeopathic therapy follows the Hippocratic method of using a few harmless medicines, aimed at assisting natural defensive and repairing processes. In contrast, official medicine, Galen's heir, advocates a return to morbid pictures and morphological alterations of single organs or other body parts, intervening in these things from the outside.

Omeopatia fra Natura e Scienza

La teoria dei sistemi, che ha conseguito notevoli successi nella ricerca della genesi e nella previsione dell'evoluzione dei sistemi naturali, può sortire importanti risultati se applicata al sistema psico-fisico uomo. Per questo motivo, il testo riportato in sintesi gli approcci metodologici seguiti dalla teoria ed i suoi risultati.

Parte dalla constatazione che, al pari di tutti gli altri sistemi dell'universo, l'uomo è un sistema dinamico unico ed indivisibile, complesso e caotico, è governato dal principio della criticità auto-organizzata e per questo molto sensibile all'azione delle perturbazioni esterne. I farmaci molto aggressivi eliminano i malanni a breve tempo, ma nel contempo, turbano i sistemi nervoso ed immunitario, inficiano la loro azione protettiva e quindi la loro capacità di debellare sul nascere i malanni gravi, i quali hanno tutto il tempo di irrobustirsi prima che il medico li accerti e cerchi poi di combatterli, quando è spesso troppo tardi. Questo sarebbe confermato dall'assenza di patologie gravi nelle popolazioni aborigene che avevano esercitato e quindi rafforzato le loro difese immunitarie.

Ciò aiuterebbe a spiegare il motivo della diminuzione, nello scorso secolo, delle malattie infettive dal 50 al 5%, ed il pari contemporaneo aumento delle patologie cronico-degenerative. Questo rischio non si corre invece assumendo rimedi omeopatici, i quali, invece, nel rispetto

dell'equilibrio dell'ecosistema uomo, cercano di potenziare, per via elettromagnetica, i suoi meccanismi di autoregolazione, anche se, secondo la medicina ufficiale, non hanno sempre sortito i risultati perseguiti, perché occorrerebbe una terapia molto più lunga di quella praticata per rieducare un sistema indebolito dai farmaci e dalle mutate condizioni ambientali.

Ricorda, infatti che i sistemi appartenenti al reame del vivente sono governati dall'interazione elettromagnetica, la quale presiede anche alle reazioni chimiche che in essi si verificano.

Spiega i rimedi omeopatici in termini di interazione risonante fra i campi e.m. connessi al flusso delle molecole madri ionizzate ingerite dall'organismo con quelli associati al moto degli ioni nel sistema cerebrale ed in quello immunitario.

Mostra, in generale, che l'omeopatia utilizza, a scopo terapeutico, gli stessi strumenti tecnologici costruiti sulla base dei risultati della fisica, recentemente usati con enorme successo a scopo diagnostico dalla medicina ufficiale.

Fornisce una nuova interpretazione degli effetti delle onde ELF, basata sulla magnetostirazione, proponendone correzioni, affinamenti e l'uso in sinergia con la musicoterapia.